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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
Andrew Warner	)	Examiner: Hal Wachsman
	)	
Serial No.: 09/627,262	)	Group Art Unit: 2857
	)	
Filed: July 28, 2000	)	Docket: 977.035US1
	)	
For: SYSTEM AND METHOD FOR TESTING A COMMUNICATIONS SERVER	)	

APPELLANT'S BRIEF ON APPEAL

MAIL STOP APPEAL BRIEF – PATENTS
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313 1450

Sir:

This brief is presented in support of the Notice of Appeal filed on October 14, 2003, from the final rejection of pending claims 7-9 of the above-identified patent application. The Office Action from which Appellant appeals was mailed April 23, 2003.

The Appeal Brief is filed in triplicate. Please charge the brief filing fee of $165.00 to Deposit Account No. 19-0743.

Appellant respectfully requests reversal of the Examiner's rejection of pending claims 7-9.

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APPELLANT'S BRIEF ON APPEAL

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Real Party in Interest

The real party in interest of the above-captioned patent application is the assignee, Digi International, Inc.

Related Appeals and Interferences

Appellant knows of no other appeals or interferences which will have a bearing on the Board's decision in the present appeal.

Status of the Claims

Claims 1-6 and 10-12 are allowed. Claims 7-9 have been finally rejected. Claims 1-12 are pending, while claims 7-9 are the subject of the present appeal.

Status of the Amendments

The original claims are 1-12.

Claims 1, 3, and 5-11 were amended on February 10, 2003. The amendment was entered by the Examiner.

Claims 7-9 received a final rejection on April 23, 2003.

No further amendments were made.

A Notice of Appeal was filed on October 14, 2003.

Summary of the Invention

The present invention teaches a system and method for testing a communications server. As noted at page 1, lines 23-28, it can be difficult to test collections of concentrators. Testing of such systems under load may require thousands of simultaneous connections. In the past, testing

of such systems would require a bank of thousands of modems. Such an approach is cumbersome, unreliable, and costly.

To address this problem, Appellant teaches attaching one or more Remote Access Server (RAS) concentrators to the system of concentrators under test in order to generate thousands of simultaneous connections required to test the system under load. As shown in Fig. 1, and as claimed in claims 7-9, one embodiment of the test system includes a Remote Access Server (RAS) concentrator, which includes a signal processor 18 and a communications interface 20. The communication interface 20 is connected to a communications medium 12, such as a Public Switched Telephone Network (PSTN) 22. The PSTN 12 is connected to a communications server 28, which is connected to one or more servers 36.1-36.N.

As discussed at page 6 lines 11-21, and as claimed in claims 7-9, in order to test a communication server, the RAS concentrator 16 spoofs an analog modem. As stated at page 9, lines 5-7, "Analog spoof mode is used to make the device under test think it is communicating with a number of individual analog modems, permitting the testing of communication servers at the highest speed and under the greatest load." As discussed at page 6, lines 11-12, in one embodiment, the signal processor 18 operates under program control to spoof individual modem connections across the communication interface 20 (e.g., the PSTN 22). For example, as noted at page 6, lines 17-20, the RAS concentrator tests a V.90 or K56flex modem-based communications server by spoofing the communication server 28 during either V.8 or V.8bis connection negotiations. As shown in Fig. 4, and as discussed at page 7, lines 3-10, the RAS concentrator 16 uses a number of information categories (e.g., modulation mode 40, V.90 availability 42, and PSTN access 44) to spoof modem connections across the communications medium 12.

The result is that the required test bed is cheaper and easier to use and maintain.

Issue Presented for Review

Are claims 7-9 properly rejected under 35 U.S.C.§103(a) as being unpatentable over Chau et al. (U.S. Patent No. 6,147,987) in view of Armistead et al. (U.S. Patent No. 6,260,071) and Eckes et al. (U.S. Patent No. 6, 243, 832)?

Grouping of Claims

The claims are grouped and argued as follows. Claims 7-9 stand and fall together.

Argument

§103 Rejection of the Claims

Claims 7-9 were rejected under 35 U.S.C.§103(a) as being unpatentable over Chau et al. (U.S. Patent No. 6,147,987; hereinafter referred to as Chau) in view of Armistead et al. (U.S. Patent No. 6,260,071; hereinafter referred to as Armistead) and Eckes et al. (U.S. Patent No. 6,243,832; hereinafter referred to as Eckes). Applicant respectfully traverses this rejection because the Examiner has not made a *prima facie* case of obviousness.

1) The Applicable Law

According to *M.P.E.P.* § 2141, which cites *Hodosh v. Block Drug Co., Inc.*, 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986), the following tenets of patent law must be adhered to when applying 35 U.S.C. § 103. First, the claimed invention must be considered as a whole. Second, the references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination. Third, the references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention. Fourth, obviousness is determined using a reasonable expectation of success standard. Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the

claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. *M.P.E.P.* § 2141 (citing *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966)).

The Examiner has the burden under 35 U.S.C. § 103 to establish a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *M.P.E.P.* § 2142 (citing *In re Vaeck*, 947 F.2d, 488, 20 USPQ2d 1438 (Fed. Cir. 1991)).

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *M.P.E.P.* § 2142 (citing *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)). The references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references. *M.P.E.P.* § 2142 (citing *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985)). In considering the disclosure of a reference, it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom. *M.P.E.P.* § 2144.01 (citing *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968)). However, if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *M.P.E.P.* § 2143.01 (citing *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)).

In order to take into account the inferences which one skilled in the art would reasonably make, the examiner must ascertain what would have been obvious to one of ordinary skill in the art at the time the invention was made, and not to the inventor, a judge, a layman, those skilled in remote arts, or to geniuses in the art at hand. *M.P.E.P.* § 2141.03 (citing *Environmental Designs, Ltd. v. Union Oil Co*, 713 F.2d 693, 218 USPQ 865 (Fed. Cir. 1983), *cert. denied*, 464 U.S. 1043 (1984)).

> The examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. In view of all factual information, the examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person. Knowledge of applicant's disclosure must be put aside in reaching this determination, yet kept in mind in order to determine the "differences," conduct the search and evaluate the "subject matter as a whole" of the invention. The tendency to resort to "hindsight" based upon applicant's disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.

M.P.E.P. § 2141.03.

In the present application, claims 7-9 recite a processor and Public Switched Telephone interface, "wherein the processor includes program code for spoofing individual analog modem connections across the Public Switched Telephone Network interface." In the present application, "spoofing" involves configuring a RAS concentrator to act like a bank of analog modems. *See* page 6, line 17. As noted above, "Analog spoof mode is used to make the device under test think it is communicating with a number of individual analog modems..." Page 9, lines 5-6. "Each RAS concentrator 16 is digitally connected but must be able to spoof an analog modem." Page 6, lines 17 -18. An example of this spoofing occurs when a RAS concentrator tests a V.90 or K56flex modem-based communications server by spoofing the communication server during the V.8 or V.8bis connection negotiations, as described at page 6, line 17 et seq. In

one embodiment, as noted at page 5, line 30 to page 6, line 2, the test bed 11 is connected directly to the communications server 28 via an Integrated Services Digital Network (ISDN), ISDN Primary Rate Interface, T1, or E1 connection. Therefore, as set forth in claims 7-9, spoofing is a technique for configuring a concentrator to appear to the system under test as a bank of analog modems.

In contrast, Chau teaches spoofing as a technique for making two sides of a disconnected circuit believe that the connection still exists. This is done in order to limit network traffic while maintaining the advantage of on-demand service. In Fig. 15, Chau illustrates a flow of operations for spoofing a network access server system or packet processor. *See* Chau at Fig. 15. According to the discussion of Fig. 15, Chau's spoofing involves monitoring traffic on a pre-existing connection and determining whether the connection has been idle for a significant period (block 1502). *See* Chau at column 13, lines 60-65. If the link has been idle (block 1504), the system tears down the link (block 1506). *See* Chau at column 13, line 66 – column 14, line 7. Depending on the results of further traffic monitoring (blocks 1508 and 1510), the system can either re-establish the link (block 1512) or the flow can end. *See* Chau at column 14, lines 9-14. Therefore, Chau's spoofing is a technique by which "an idle connection temporarily relinquishes its telephone line." Chau at column 2, lines 5-7. In contrast, Appellant uses the term "spoofing" to describe a technique for simulating a group of analog modems with a RAS concentrator.

Armistead teaches a method and apparatus for automatic routing of circuit switched data connections based upon stored behavioral information. Eckes teaches a network access server testing system and methodology for stress-testing an NAS. Notabley, Armistead and Eches do not mention spoofing.

Because Chau, Eckes, and Armestead, alone or in combination, does not teach or suggest spoofing a group of analog modems with a RAS concentrator, as defined in the present application and claimed in claims 7-9, the Examiner has failed to establish a *prima facie* case of obviousness. Reversal of the Examiner's rejection of claims 7-9 is hereby requested.

Conclusion

It is respectfully submitted that the claimed invention is not unpatentable in view of the cited art. It is respectfully submitted that claims 7-9 should therefore be allowed. Reversal of the Examiner's rejections of claims 7-9 is respectfully requested.

Respectfully submitted,

Andrew Warner

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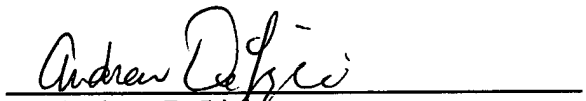
By 
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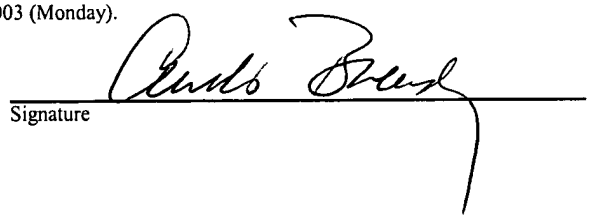
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APPENDIX: The Claims on Appeal

Claims 7-9 are on appeal.

1. (Previously Amended) A method of testing a bank of modems, comprising:

providing a test bed having a Remote Access Server (RAS) concentrator, wherein the RAS concentrator includes means for spoofing operation of a plurality of modems;

connecting the RAS concentrator to the bank of modems; and

executing software in the test bed to establish a plurality of simultaneous connections between the RAS concentrator and the bank of modems.

2. (Original) The method of claim 1, wherein connecting includes connecting the RAS concentrator to

the bank of modems across a Public /Switched Telephone Network (PSTN) and wherein executing includes establishing each connection across the Public Switched Telephone Network.

3. (Previously Amended) The method of claim 1, wherein connecting includes connecting the RAS concentrator to the bank of modems across a Public Switched Telephone Network (PSTN), wherein the RAS concentrator connects to the PSTN via an Integrated Services Digital Network (ISDN) Primary Rate Interface.

4. (Original) In a communications server having a remote access server (RAS) concentrator for communicating with a plurality of modems across a communications medium, a method of testing the communications server, comprising:

providing a test bed having a second RAS concentrator, wherein the second RAS

concentrator includes means for spoofing operation of a plurality of modems;

connecting the second RAS concentrator to the communications server under test; and

executing software in the test bed to establish a plurality of simultaneous connections between the second RAS concentrator and the RAS concentrator within the communications server under test.

5. (Previously Amended) The method of claim 4, wherein the communications medium is a Public Switched Telephone Network (PSTN);

wherein connecting includes connecting each of the RAS concentrators to the Public Switched Telephone Network (PSTN) and wherein executing includes establishing each simultaneous connection across the Public Switched Telephone Network.

6. (Previously Amended) The method of claim 4, wherein the communications medium is a Public Switched Telephone Network (PSTN) having a first and a second Integrated Services Digital Network (ISDN) Primary Rate Interface (PRI);

wherein connecting includes connecting the second RAS concentrator and the RAS concentrator under test to the Public Switched Telephone Network (PSTN) via the first and second ISDN Primary Rate Interface, respectively, and wherein executing includes establishing an ISDN PRI connection across the Public Switched Telephone Network.

7. (Previously Amended) A Remote Access Server (RAS) concentrator, comprising:

a processor; and

a Public Switched Telephone Network (PSTN) interface connected to the processor, wherein the processor includes program code for spoofing individual analog modem connections across the Public Switched Telephone Network (PSTN) interface.

8. (Previously Amended) A Remote Access Server (RAS) concentrator adapter, comprising:

a processor;

a computer interface in communication with the processor, wherein the computer interface is adaptable for communicating with a computer; and

a Public Switched Telephone Network (PSTN) interface connected to the processor, wherein the processor includes program code for spoofing individual analog modem connections across the Public Switched Telephone Network (PSTN) interface.

9. (Previously Amended) The RAS concentrator adapter of claim 8, wherein the RAS concentrator adapter plugs into a computer motherboard.

10. (Previously Amended) A system for testing a communications server, wherein the communications server provides a plurality of simultaneous modem connections, the system comprising:

a Public Switched Telephone Network;

a processor; and

a Remote Access Server (RAS) concentrator connected to the processor and the Public Switched Telephone Network, wherein the RAS concentrator includes:

a signal processor for managing a plurality of modem connections; and

a Public Switched Telephone Network interface connected to the signal processor and the Public Switched Telephone Network, wherein the signal processor includes program code for spoofing individual analog modem connections across the Public Switched Telephone Network (PSTN) interface.

11. (Previously Amended) A system for testing a communications server, wherein the communications server provides a plurality of simultaneous modem connections, the system

comprising:

a communications medium;

a processor; and

a Remote Access Server (RAS) concentrator connected to the processor and the communications medium, wherein the RAS concentrator includes:

a signal processor for managing a plurality of modem connections; and

a communications interface connected to the signal processor and the communications medium, wherein the signal processor includes program code for spoofing individual analog modem connections across the communications medium.

12. (Original) The system according to claim 11, wherein the communications medium includes a Public Switched Telephone Network.